

## REVIEW PROBLEMS

1. In garden peas a tall vine is dominant to short. If a homozygous tall plant is crossed with a homozygous short plant, what genotypes are possible in the F1 generation? What phenotypes can be expected?

2. In snapdragons, red flower colour (R) is codominant with white (W). The normal leaves are broad (B), this trait is codominant with narrow leaves (N). A plant heterozygous for both traits would have pink flowers and medium breadth leaves. If a red flowered broad leaved plant is crossed with a white flowered narrow leaved one, what will be the genotypes and phenotypes of the F1 generation?

What will be the genotypes and phenotypes of the F2 generation? Give ratios.

3. Both my mother's parents had brown eyes. Both my father's parents had brown eyes. My mother had brown eyes and my father had blue eyes. My brother, my 3 sisters and I all have brown eyes. One of my sisters married a man with brown eyes and they have a son with brown eyes. I married a woman with blue eyes, our 3 children, one girl and two boys all have blue eyes. Draw a pedigree chart for my family showing the individuals who have blue eyes. Determine the most likely genotypes of all individuals. Also note: my mother has 8 brothers and sisters all with brown eyes. My 4 siblings and I and my 18 cousins on my mother's side all have brown eyes. My uncles and aunts who are not my mother's siblings may have blue or brown eyes.

4. A woman with blood type A+ has a child who is AB-. Could a man with type O+ blood be the child's father? State your reasoning.